

Application No. 09/396,266  
Docket No. 1998U007A.US  
Reply to Office Action Dated May 15, 2003

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

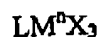
#### Listing of Claims:

1-32 (Cancelled).

33. (Currently amended). A process for polymerizing olefins comprising contacting olefin(s) with a catalyst system comprising an activator and a catalyst precursor, wherein

(a) the activator is a neutral or ionic ionizing salt comprising a cation selected from the group consisting of triphenylcarbenium, ~~dimethylanilinium~~, and trialkylammonium, and an anion selected from the group consisting of borate and aluminate; and

(b) the catalyst precursor is represented by:



wherein M is a Group 4 metal;

L is an unsubstituted or substituted indenyl, fluorenyl ligand or substituted cycloalkadienyl ligand except for pentamethylcyclopentadienyl;

~~X is benzyl is selected from the group consisting of hydrogen, and unsubstituted and substituted versions of: aryl, alkyl, alkenyl, alkylaryl, and arylalkyl radicals having from 1-20 carbon atoms;~~  
and

n is 4.

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34. (Previously presented). The process of claim 33 wherein L is a substituted cycloalkadienyl excepting pentamethylcyclopentadienyl.
35. (Previously presented). The process of claim 33 wherein L is an unsubstituted or substituted indenyl or fluorenyl ligand.
36. (Previously presented). The process of claim 33 wherein the activator is a salt comprising a cation selected from the group consistent of triphenylcarbenium, dimethylanilinium, and trialkylammonium, and an anion that is a borate.
37. (Currently Amended). The process of claim 33 wherein the catalyst system is selected from the group consisting essentially of  
(MeCp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, (1,3-Me<sub>2</sub>Cp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, (Fluorenyl)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, 2-(p-tolyindenyl)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, (1-trimethylsilylindenyl)Zr(CH<sub>2</sub>Ph)<sub>3</sub>( $\eta^6$ (PhCH<sub>2</sub>B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub>))/triphenylcarbenium tetrakis(pentafluorophenyl)borate or ~~(1,3-Me<sub>2</sub>Cp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/trihexylammonium~~ (1,3-Me<sub>2</sub>Cp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/trihexylammonium tetrakis(pentafluorophenyl)borate.
38. (Currently amended). A catalyst system comprising an activator and a catalyst precursor, wherein
- (a) the activator is a neutral or ionic salt comprising a cation selected from the group consisting of triphenylcarbenium, ~~dimethylanilinium~~, and trialkylammonium, and an anion selected from the group consisting of borate and aluminate; and
  - (b) the catalyst precursor is represented by:

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wherein M is a Group 4 metal;

L is an unsubstituted or substituted indenyl, fluorenyl ligand or substituted cycloalkadienyl ligand except for pentamethylcyclopentadienyl;

X is benzyl is selected from the group consisting of hydrogen, and unsubstituted and substituted versions of: aryl, alkyl, alkenyl, alkylaryl, and arylalkyl radicals having from 1-20 carbon atoms; and

n is 4.

39. (Previously presented). The catalyst system of claim 38 wherein L is a substituted cycloalkadienyl excepting pentamethylcyclopentadienyl.
40. (Previously presented). The catalyst of claim 38 wherein L is an unsubstituted or substituted indenyl or fluorenyl ligand.
41. (Currently Amended). The ~~process catalyst~~ of claim 38 wherein the activator is a salt comprising a cation selected from the group consisting of triphenylcarbenium, dimethylanilinium, and trialkylammonium, and an anion that is a borate.
42. (Currently Amended). The catalyst system of claim 38 selected from the group consisting essentially of (MeCp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, (1,3-Me<sub>2</sub>Cp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, (Fluorenyl)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, 2-(p-tolylindenyl)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/triphenylcarbenium tetrakis(pentafluorophenyl)borate, (1-trimethylsilylindenyl)Zr(CH<sub>2</sub>Ph)<sub>3</sub>( $\eta^6$ (PhCH<sub>2</sub>B(C<sub>6</sub>F<sub>5</sub>)<sub>3</sub>))/triphenylcarbenium tetrakis(pentafluorophenyl)borate or (1,3-Me<sub>2</sub>Cp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/trihexylammonium (1,3-Me<sub>2</sub>Cp)Zr(CH<sub>2</sub>Ph)<sub>3</sub>/trihexylammonium tetrakis(pentafluorophenyl)borate.